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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 493,697	01 28 2000	Lawrence S. Pan	CDST-CT S118-1P	2550

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EXAMINER

WILLIAMS, JOSEPH L

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06 04 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/493,697

Applicant(s)

PAN ET AL.

Examiner

Joseph L. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-172 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8, 22, 53, 54, 80, 87-89, 91, 94, 139, 140 and 166-168 is/are rejected.
- 7) ☐ Claim(s) See Continuation Sheet is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3, 22, 53, 54, 87-89, 139, and 140 are rejected under 35 U.S.C. 102(e) as being anticipated by Spindt et al. (US 5,872,424), of record by Applicant.

Regarding claim 1, Spindt ('424) teaches in figure 6 a flat panel display apparatus comprising: a faceplate (606); a backplate (604) disposed opposing the faceplate, the faceplate and the backplate adapted to be connected in a sealed environment such that a low pressure region exists between the faceplate and the backplate; and a spacer assembly disposed within the sealed environment, the spacer assembly supporting the faceplate and the backplate against forces acting in a direction towards the sealed

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environment, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 (see column 4, lines 38-41) for the spacer assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure.

Regarding claim 2, Spindt ('424) teaches the spacer assembly further comprises: a coating material (602) applied to at least a portion of the spacer structure.

Regarding claim 3, Spindt ('424) teaches the spacer structure is selected from the group consisting of wall segments, posts, crosses, pins, T-shaped objects, spacer walls, and support structures.

Regarding claim 22, Spindt ('424) teaches the spacer structure is comprised of at least one material selected from the group consisting of: borides, carbides, and nitrides.

Regarding claim 53, Spindt ('424) teaches the spacer structure 10 is formed of a material which is chosen using a selection process which considers the delta G of the material comprising the spacer structure.

Regarding claim 54, Spindt ('424) teaches the coating material is formed of a material which is chosen using a selection process which considers the 15 delta G of the coating material.

Regarding claim 87, Spindt ('424) teaches a spacer assembly for use in a field emission display device, the spacer assembly adapted to support a faceplate and a backplate against forces acting in a direction towards each other, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 for the spacer. assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure.

Regarding claim 88, Spindt ('424) teaches the spacer assembly further comprises: a coating material applied to at least a portion of the spacer structure.

Regarding claim 89, Spindt ('424) teaches the spacer structure is selected from the group consisting of wall segments, posts, crosses, pins, T-shaped objects, spacer walls, and support structures.

Regarding claim 139, Spindt ('424) teaches the spacer structure is formed of a material which is chosen using a selection process which considers the delta G of the material comprising the spacer structure.

Regarding claim 140, Spindt ('424) teaches the coating material is formed of a material which is chosen using a selection process which considers the delta G of the coating material.

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2. Claims 1, 2, 5, 87, 88, 91, and 94 are rejected under 35 U.S.C. 102(e) as being anticipated by Shibata et al. (US 6,353,280).

Regarding claim 1, Shibata ('280) teaches a flat panel display apparatus comprising: a faceplate; a backplate disposed opposing the faceplate, the faceplate and the backplate adapted to be connected in a sealed environment such that a low pressure region exists between the faceplate and the backplate; and a spacer assembly disposed within the sealed environment, the spacer assembly supporting the faceplate and the backplate against forces acting in a direction towards the sealed environment, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 for the spacer assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure.

Regarding claim 2, Shibata ('280) teaches the spacer assembly further comprises: a coating material applied to at least a portion of the spacer structure.

Regarding claim 5, Shibata ('280) teaches the coating material is comprised of a layered material.

Regarding claim 87, Shibata ('280) teaches a spacer assembly for use in a field emission display device, the spacer assembly adapted to support a faceplate and a

backplate against forces acting in a direction towards each other, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 for the spacer. assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure

Regarding claim 88, Shibata ('280) teaches the spacer assembly further comprises: a coating material applied to at least a portion of the spacer structure.

Regarding claim 91, Shibata ('280) teaches the coating material is comprised of a layered material.

Regarding claim 94, Shibata ('280) teaches the layered material is selected from the group consisting of graphite, MoS_2 , and MoSe_2 .

3. Claims 1, 2, 5, 7, 8, 80, 87, 88, 91, 94, and 166-168 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuroda et al (US 6,366,014).

Regarding claim 1, Kuroda ('014) teaches a flat panel display apparatus comprising: a faceplate; a backplate disposed opposing the faceplate, the faceplate and the backplate adapted to be connected in a sealed environment such that a low pressure region exists between the faceplate and the backplate; and a spacer assembly disposed within the sealed environment, the spacer assembly supporting the faceplate

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and the backplate against forces acting in a direction towards the sealed environment, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 for the spacer assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure.

Regarding claim 2, Kuroda ('014) teaches the spacer assembly further comprises: a coating material applied to at least a portion of the spacer structure.

Regarding claim 5, Kuroda ('014) teaches the coating material is comprised of a layered material.

Regarding claim 7, Kuroda ('014) teaches the layered material is a semimetal.

Regarding claim 8, Kuroda ('014) teaches the layered material is selected from the group consisting of graphite, MoS_2 , and MoSe_2 .

Regarding claim 80, Kuroda ('014) teaches the coating material is comprised of a metal sulfide.

Regarding claim 87, Kuroda ('014) teaches a spacer assembly for use in a field emission display device, the spacer assembly adapted to support a faceplate and a

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backplate against forces acting in a direction towards each other, the spacer assembly tailored to provide a secondary electron emission coefficient of approximately 1 for the spacer assembly when the spacer assembly is subjected to flat panel display operating voltages, the spacer assembly further including a spacer structure.

Regarding claim 88, Kuroda ('014) teaches the spacer assembly further comprises: a coating material applied to at least a portion of the spacer structure.

Regarding claim 91, Kuroda ('014) teaches the coating material is comprised of a layered material.

Regarding claim 94, Kuroda ('014) teaches the layered material is selected from the group consisting of graphite, MoS_2 , and MoSe_2 .

Regarding claim 166, Kuroda ('014) teaches the coating material is comprised of a metal sulfide.

Regarding claim 167, Kuroda ('014) teaches that the metal sulfide is selected from the group consisting of MoS_2 and WS_2 .

Regarding claim 168, the Examiner notes that the claimed limitation is drawn to a process of manufacturing, which is incidental to the claimed apparatus. It is well

established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Allowable Subject Matter

4. Claims 4, 6, 9-16, 20, 23-52, 55-79, 83-86, 90, 92, 93, 95-102, 104, 106, 109-139, 141-165, and 169-172 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (703) 305-1670. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Joseph Williams
Examiner
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June 1, 2003